UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/586,205	06/02/2000	Tetsujiro Kondo	450106-02134	6105

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EXAMINER
DANG, DUY M

ART UNIT	PAPER NUMBER
2621	13

DATE MAILED: 07/15/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed
  after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any
  earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>08 September 2003</u> .

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is
closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-39* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *2,5,6,11-21,23,25,27,29,31,33,35,36 and 39* is/are allowed.

6)☒ Claim(s) *1,3,4,7-10,22,24,26,28,30,32,34,37 and 38* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

    If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____ .

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage
         application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

    a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1)☐ Notice of References Cited (PTO-892)	4)☐ Interview Summary (PTO-413) Paper No(s). _____ .
2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)	5)☐ Notice of Informal Patent Application (PTO-152)
3)☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .	6)☐ Other: .

DETAILED ACTION

1.   A request for continued examination under 37 CFR 1.114,

including the fee set forth in 37 CFR 1.17(e), was filed in this

application after final rejection.   Since this application is

eligible for continued examination under 37 CFR 1.114, and the

fee set forth in 37 CFR 1.17(e) has been timely paid, the

finality of the previous Office action has been withdrawn

pursuant to 37 CFR 1.114.   Applicant's submission filed on

4/29/04 has been entered.

2.   The following is a quotation of 35 U.S.C. 103(a) which

forms the basis for all obviousness rejections set forth in this

Office action:

> (a) A patent may not be obtained though the invention is not identically
> disclosed or described as set forth in section 102 of this title, if the
> differences between the subject matter sought to be patented and the prior
> art are such that the subject matter as a whole would have been obvious at
> the time the invention was made to a person having ordinary skill in the
> art to which said subject matter pertains. Patentability shall not be
> negatived by the manner in which the invention was made.

3.   Claims 1, 3-4, 7-10, 22, 24, 26, 28, 30, 32, 34, and 37-38

are rejected under 35 U.S.C. 103(a) as being unpatentable over

Rao et al. (US Patent No. 5,790,704) in view of Kikuchi (US

Patent No. 5,828,326).

Regarding the representative claim 1, Rao teaches an

encoding apparatus (i.e., the "encoder" shown at 150 of figure 5

and mentioned in col. 10 lines 52-60) comprising:

a uniformly random number generating portion for generating

uniformly random numbers (i.e., the "random number generation"

for generating pseudo random numbers according to col. 13 lines

24-25 in together with col. 14 lines 55-57 functions as the so

called "uniformly random number generating portion"); and

an encoding portion for encoding for each pixel value of an

original picture based on a compared result of at least one

threshold value that is set based on the uniformly random

numbers and pixel value based on the original signal (see

"threshold processing circuit" generally shown at 4 in figure 1

and detailed in figure 5 where "encoder 150" is disclosed. With

regard to figure 5, the result of the comparators H01 to H01 are

encoded by encoder 150 for generating the output pixel data 5

according to col. 10 lines 53-60; and those threshold values Th1

to Th1 shown in figure 5 are generated by using random generator

according to col. 11 lines 65-67. In addition, the input image

3 of figure 5 refers to the so called "pixel value of original

picture" according to col. 5 lines 20-24 in together with col.

12 lines 14-15).

Rao fails to teaches the claimed features that of "a

transmission signal generating portion for adding a synchronous

signal that includes at least either horizontal synchronous

signal, a vertical synchronous signal, or a sequential

synchronous signal". However, such features are well known in

the art as evidenced by Kikuchi.

Kikuchi, in the same field of invention, that of image

coding, teaches transmission signal generating portion (see item

21 of figure 5) for adding a synchronous signal (see synchronous

data denoted at S58 and S59 in figure 5 and mentioned in col. 3

line 65 to col. 4 line 2; col. 4 lines 25-30; and col. 10 lines

15-18)that includes a horizontal synchronous signal (see col. 6

lines 58-60), a vertical synchronous signal(see col. 6 lines 58-

60), a sequential synchronous signal or the like (see serial

code S60 mentioned in col. 3 line 65 to col. 4 line 5. Note

that this code S60 including synchronous data S58 and S59 refers

to the so called a sequential synchronous signal or the like").

Therefore, it would have been obvious to one of ordinary

skill in the art at the time the invention was made to use the

such transmission as taught by Kikuchi in combination with Rao

in order to eliminate the skew or crosstalk of the image data,

and to overcome the restriction of the transmission cable in

term of length and size as suggested by Kikuchi in col. 1 lines

32-45.

Regarding claim 3, Rao further teaches wherein said

encoding portion repeatedly encodes each of all pixel values in

a predetermined range of the original picture signal, one pixel

value at the time (these features are clearly shown in Rao's

figures 13A-13C.   Note the "target pixel" denoted at "*", the

encoder in Rao repeatly encodes target pixel at a location shown

in figure 13A and so to target pixel shown in figures 13B-13C.

The combination of the pixel denoted at A-B and "*) as shown in

figure 13A for example corresponds to the so called "a

predetermined range of the original picture signal").

Regarding claim 4, Rao further wherein the predetermined

range is one frame of the original picture signal (i.e., the

combination of the target pixel and pixels A-B in figure 13A,

for example, corresponds to the so called "one frame").

Regarding claim 7, Rao further teaches wherein said

encoding apparatus executes binarization of each pixel value of

the original picture signal based on the threshold value (see

figure 5 (detailed version of item 4a (threshold processing

circuit based on comparison operation) in figure 1). Note that

the output of encoder 150 is a binary coded data according to

col. 11 lines 61-64.   Thus, Rao's threshold processing circuit

inherently includes "binarization").

Regarding claim 8, Rao further teaches wherein the

threshold value is a value in a gradation range of the original

signal (see equation 5 and its corresponding text portion

mentioned in col. 18 lines 3-20).

Regarding claim 9, Rao further teaches wherein said at
least one threshold value is a fixed number of values that
depend on a predetermined original picture signal (see "preset
threshold value" mentioned in col. 2 line 59 and "fixed
threshold value" mentioned in col. 1 lines 15-19).

Regarding claim 10, Rao further teaches wherein the
original picture signal is a digital picture signal (see "input
pixel data" shown at 1 in figure 1 and mentioned in col. 5 lines
1-5).

Regarding claim 22, this claim recites the features called
for in the apparatus claim 1 above. Therefore, claim 22 is also
rejected for the reasons as set forth in claim 1 above.

Regarding claim 24, it is noted that claim 24 recites the
features called for in claim 22. Thus, the advanced statement
as applied to claim 22 above are incorporated herein. Rao
further teach computer readable medium (see RAM, ROM, and CPU
mentioned in col. 11 lines 4-14. Rao fails to explicitly
teaches a program. However, such program is inherently included
in Rao's CPU in order for the information to be read and written
from and to RAM according to col. 11 lines 4-14).

The advanced statements applied to claim 1 with regard Rao,
above, are incorporated herein. With regard to claim 26, this
claim recites the features called for in claim 1 with the

addition of "encoding an original signal". Rao further teaches encoding an original signal (i.e., the "input image" shown at 1 in figure 1).

Regarding claim 28, Rao further teaches wherein said encoding portion repeatedly encodes each of all pixel values in a predetermined range of the original picture signal, one pixel value at the time (these features are clearly shown in Rao's figures 13A-13C. Note the "target pixel" denoted at "*", the encoder in Rao repeatly encodes target pixel at a location shown in figure 13A and so to target pixel shown in figures 13B-13C. The combination of the pixel denoted at A-B and "*) as shown in figure 13A for example corresponds to the so called "a predetermined range of the original picture signal").

Regarding the method claim 30, this claim recites the features called for in the apparatus claim 26 above. Therefore, claim 30 is also rejected for the reasons as set forth in claim 26 above.

Regarding claim 32, it is noted that claim 24 recites the features called for in claim 30. Thus, the advanced statement as applied to claim 30 above are incorporated herein. Rao further teach computer readable medium (see RAM, ROM, and CPU mentioned in col. 11 lines 4-14. Rao fails to explicitly teaches a program. However, such program is inherently included

in Rao's CPU in order for the information to be read and written
from and to RAM according to col. 11 lines 4-14).

Regarding the representative claim 34, Rao teaches an
encoding apparatus (i.e., the "encoder" shown at 150 of figure 5
and mentioned in col. 10 lines 52-60) comprising:

a uniformly random number generating portion for generating
uniformly random numbers (i.e., the "random number generation"
for generating pseudo random numbers according to col. 13 lines
24-25 in together with col. 14 lines 55-57 functions as the so
called "uniformly random number generating portion"); and

an encoding portion for encoding for each pixel value of an
original picture based on a compared result of at least one
threshold value that is set based on the uniformly random
numbers and pixel value based on the original signal (see
"threshold processing circuit" generally shown at 4 in figure 1
and detailed in figure 5 where "encoder 150" is disclosed. With
regard to figure 5, the result of the comparators H01 to H01 are
encoded by encoder 150 for generating the output pixel data 5
according to col. 10 lines 53-60; and those threshold values Th1
to Th1 shown in figure 5 are generated by using random generator
according to col. 11 lines 65-67. In addition, the input image
3 of figure 5 refers to the so called "pixel value of original

picture" according to col. 5 lines 20-24 in together with col.

12 lines 14-15); and

wherein said encoding portion encodes each pixel value of

the original picture signal a plurality of times (these features

are clearly shown in Rao's figures 13A-13C. Note the "target

pixel" denoted at "*", the encoder in Rao repeatedly encodes

target pixel at a location shown in figure 13A and so on to

target pixel shown in figures 13B-13C).

Rao fails to teaches the newly added features that of "a

transmission signal generating portion for adding a synchronous

signal that includes at least either horizontal synchronous

signal, a vertical synchronous signal, or a sequential

synchronous signal". However, such features are well known in

the art as evidenced by Kikuchi.

Kikuchi, in the same field of invention, that of image

coding, teaches transmission signal generating portion (see item

21 of figure 5) for adding a synchronous signal (see synchronous

data denoted at S58 and S59 in figure 5 and mentioned in col. 3

line 65 to col. 4 line 2; col. 4 lines 25-30; and col. 10 lines

15-18)that includes a horizontal synchronous signal (see col. 6

lines 58-60), a vertical synchronous signal(see col. 6 lines 58-

60), a sequential synchronous signal or the like (see serial

code S60 mentioned in col. 3 line 65 to col. 4 line 5. Note

that this code S60 including synchronous data S58 and S59 refers

to the so called a sequential synchronous signal or the like").

Therefore, it would have been obvious to one of ordinary

skill in the art at the time the invention was made to use the

such transmission as taught by Kikuchi in combination with Rao

in order to eliminate the skew or crosstalk of the image data,

and to overcome the restriction of the transmission cable in

term of length and size as suggested by Kikuchi in col. 1 lines

32-45.

It is noted that claim 37 is a method claim reciting the

features called in an apparatus claim 34. Thus, claim 37 is

rejected for the same reasons as above.

The advanced statement as applied to claim 34 are

incorporated herein. With regard to claim 38, While Rao further

teaches recording medium (see RAM, ROM, and CPU mentioned in

col. 11 lines 4-14), Rao fails to explicitly teaches a computer

program. However, such computer program is inherently included

in Rao's CPU in order for the information to be read and written

from and to RAM according to col. 11 lines 4-14).

4.   Claims 2, 5, 6, 11-21, 23, 25, 27, 29, 31, 33, 35-36, and

39 are allowed.

5.   The following is a statement of reasons for the indication

of allowable subject matter:

Regarding claim 2, the cited prior art (Rao) fails to teach or suggest the features of "wherein said encoding portion encodes each pixel value of the original picture signal a plurality of times, and wherein said uniformly random number generating portion generates a different uniformly random number for encoding each pixel value of the original picture signal a plurality of times". Claims 5-6 are also allowed as being dependent upon the allowed base claim 2.

Regarding claim 11, the cited prior art (Rao) fails to teach or suggest the features of "a cumulating portion for cumulating the encoded values of the encoded picture signal for each pixel of the original picture, a decoding portion for decoding the encoded values cumulated by said cumulating portion for each pixel value of the original picture signal based on the number of times counted by a counting portion, and a sampling portion for sampling the encoded values of the encoded picture signal". Claims 18-21 depend from claim 11 and are also allowed for the same reasons as above.

Regarding claim 12, the cited prior art fails to teach or suggest the features "a cumulating portion for cumulating the encoded values of the encoded picture signal for each pixel of the original picture, a decoding portion for decoding the encoded values cumulated by said cumulating portion for each

pixel value of the original picture signal based on the number

of times counted by a counting portion, a sampling portion for

sampling the encoded values of the encoded picture signal,

wherein said cumulating portion cumulates the encoded values

sampled by said sampling portion". Claim 13 is allowed as being

dependent upon the allowed base claim.

Regarding claim 14, the cited prior art fails to teach or

suggest the features of "a controlling portion for causing said

cumulating portion to stop cumulating the encoded values".

Claims 15-17 are also allowed as being dependent upon the

allowed base claim.

Regarding claims 23 and 25, the cited prior art (Rao) fails

to teach or suggest the features of " counting the number of

times cumulated at the cumulated step".

Regarding claim 27, it is noted that claim 27 recites the

features called for in claim 2. Thus, claim 27 is also allowed

for the same reasons as set forth in claim 2 above.

Regarding claims 29, 31, 33, 35-36, and 39, the cited prior

art (Rao) fails to teach or suggest the features of "a counting

portion for counting the number of times cumulated".

Any comments considered necessary by applicant must be

submitted no later than the payment of the issue fee and, to

avoid processing delays, should preferably accompany the issue

fee.   Such submissions should be clearly labeled "Comments on

Statement of Reasons for Allowance."

6.   Applicant's arguments filed 4/29/04 have been considered

but they are not persuasive.

In response to Applicant's arguments (see page 18)with

regard to claims 34 and 37-38, the examiner agrees that Rao does

not teach the newly added features that of "a transmission

signal generating portion for adding a synchronous signal that

includes at least either a horizontal synchronous signal, a

vertical synchronous signal, or a sequential synchronous

signal".   Thus, the rejections of claims 34 and 37-38 under 35

USC 102(b) with regard to Rao have been withdrawn. However, upon

further consideration, a new ground(s) of rejection under 35 USC

103 is made in view of Rao and Kikuchi as pointed out in the

paragraph 7 above.

In response to Applicant's arguments (see page 18 last

paragraph to page 20 line 2) with regard to Kikuchi's reference,

the examiner acknowledges that.   However, Applicant cannot rely

upon the foreign priority papers to overcome this rejection

because a translation of said papers has not been made of record

in accordance with 37 CFR 1.55.   See MPEP § 201.15.

7.   Any inquiry concerning this communication or earlier

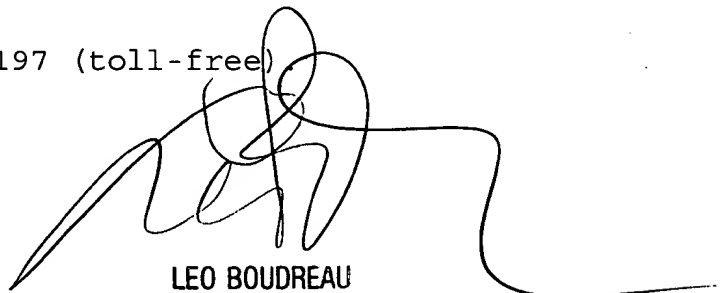communications from the examiner should be directed to Duy M

Dang whose telephone number is 703-305-1464. The examiner can
normally be reached on Monday to Thursday from 6:30AM to
5:00PM..

If attempts to reach the examiner by telephone are
unsuccessful, the examiner's supervisor, Leo H Boudreau can be
reached on 703-305-4706. The fax phone number for the
organization where this application or proceeding is assigned is
703-872-9306.

Information regarding the status of an application may be
obtained from the Patent Application Information Retrieval
(PAIR) system. Status information for published applications
may be obtained from either Private PAIR or Public PAIR. Status
information for unpublished applications is available through
Private PAIR only. For more information about the PAIR system,
see http://pair-direct.uspto.gov. Should you have questions on
access to the Private PAIR system, contact the Electronic
Business Center (EBC) at 866-217-9197 (toll-free)

dmd
7/8/04

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